AN ANALYSIS OF THE DIFFERENCES BETWEEN LEARNING GROUPS USING THE PROJECT DARE PROGRAM

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An Analysis of the Differences between Learning Groups Using the Project DARE Program

An abstract of a Thesis by
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The Problem. The purpose of this study was to address the Project DARE chemical substance prevention education program, and to determine if this instruction benefitted fifth grade students by increasing scores on a substance prevention posttest.

Procedures. Five similar, but not randomly selected fifth grade classes, were chosen to take part in this study. Initially, the five groups of 135 students were given identical pretests. The 83 student experimental group was then treated with the DARE Program, which included the direct teaching of chemical substance education and resistance education by a specially trained police officer. The control group received no substance abuse instruction during this period. After 17 weeks of instruction in the DARE Program, both groups were then given a posttest to determine the amount of gain which had occurred. An ANCOVA was run on the data to allow for statistical adjustments on the dependent variable. Comparisons were made on the adjusted means relating to gains by both groups of students over the 17-week period of instruction.

Findings. A comparison of adjusted means indicated that there was statistical significance between the experimental group and the control group at the .05 level. The null hypothesis was rejected as a result of the findings. A delta test was run to determine if there was practical significance of the findings. The delta test indicated that a practical significance did exist.

Conclusion. Statistical significance was found to exist between the experimental and control groups. Consensus by leading researchers support the findings of the statistical significance and practical significance suggested by this study.

Recommendation. Testing and accurately measuring the gain in substance abuse education is extremely hard to accomplish. The writer suggests that more research is needed to determine the extent to which substance resistance skills can be taught, and the exact teaching strategies to be employed while teaching them.

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Chapter I

INTRODUCTION

The purpose of this study was to determine if Project DARE (Drug Abuse Resistance Education) had a positive influence on fifth grade students by making them more aware of and more knowledgeable of chemical substances and their abuses.

Few social issues, if any, have so occupied center stage in contemporary U.S.A. as the alcohol and substance abuse problems of adolescents (LaChance, 1989). Substance abuse can affect adolescent students of all social, economic, and geographic regions. All adolescents are at risk of the psychological and physiological ravages of substance abuse (Donovan & Jessor, 1983).

A review of the literature shows that the United States is estimated to have the highest levels of illicit drug involvement found in any developed country in the world (Johnston, O'Malley, & Bachman, 1985; LaChance, 1989). Research shows that drug use among children is 10 times more prevalent than parents suspect (U.S. Department of Education, 1986). The

percentage of students using drugs by the sixth grade has tripled from 1979 to 1989. Now, one in six 13-year olds has used marijuana and nearly two-thirds of all American youth try an illicit drug before they finish high school (Blau, Gillespie, Felner, & Evans, 1988; Collabolleta, Bratter, & Fossbender, 1983; Johnston et al., 1985; Leatt, 1987).

An investigation by Jessor (1982) indicated that by the seventh grade, 5% of both females and males were already problem drinkers. This proportion increased steadily in each grade until by grade 12, 20.6% of females and 40% of males had problems with alcohol consumption. In addition, the age of beginning drinking has lowered each year. Recent figures placed the average age for beginning consumption of alcohol in the United States at 12.5 years (McCurdy, 1986).

Although prevalence of use of some substances may be down, the intensity of use may be going up (McCurdy, 1986). Today's substances are more potent and addictive than ever before. For example, marijuana today can be 5 to 20 times stronger than it was previously (Towers, 1987). Crack, a new and highly addictive form of cocaine, and the so-called new

"designer drugs" have been known to cause permanent brain damage. Increases of use are also being seen in the use of inhalants and PCP (Phencyclidine) among high school students. In fact, daily use of inhalants has become more prevalent than ever before (Johnston et al., 1985; McCurdy, 1986).

In Minnesota, St. Paul police Sgt. Darryl Schmidt reported that inhalants such as "white out" liquid paper and shoe polish are being used more frequently by adolescent students. These two types of inhalants are quickly becoming the "drug of choice" among middle-school-aged students in the Twin Cities area.

Statement of the Problem

Schools can play a major role in the solution of student substance use by becoming involved in early prevention programming. Successful prevention demands early attention to a combination of affective, attitudinal, and behaviorial components in addition to disseminating accurate information (Green, 1987).

A review of the literature revealed several common components that seem to form the basis of a successful drug prevention program. The two areas addressed most

frequently are developing appropriate social skills and nurturing self-esteem (Leatt, 1987; McCurdy, 1986; Towers, 1987; U.S. Department of Education, 1986).

During the past 10 years, there has been a marked change in the direction of substance abuse education. Traditionally, health education consisted of providing students with knowledge concerning positive and negative health behaviors (Battjes, 1985). However, researchers have recently suggested that teaching students about the extreme negative consequences of substance abuse is of marginal value (Botvin & Wills, 1985; Gonzales, 1989; Johnston, O'Malley, & Bachman, 1989).

Efforts to discourage experimentation and use of substances including alcohol, tobacco, and other substances must focus on providing adolescents with social skills training so that they can successfully resist peer pressure and media influences (DeJong, 1987; Johnston et al., 1989). Such training typically involves behavior modeling, role-playing, and extended pratice, culminating in a public commitment not to use alcohol, tobacco, or other substances. Of course, teaching students how to refuse offers of such

substances is insufficient; they must also be motivated to apply those skills. To create that motivation, they must be given accurate information about the immediate and long-term consequences of substance abuse (Kandel & Yamaguchi, 1985).

The topic of substance abuse has been of high interest and concern to the Board of Education of the Stewartville-Racine Public Schools, and the recent media exploits of President George Bush and Governor Rudy Perpich have rekindled the fire for the members of the Board of Education.

The School Board and administration have been approached by a large number of vendors promoting substance abuse programs claiming to help students, parents, and educational staff combat student substance abuse. Few prevention programs have been carefully evaluated by school districts or independent researchers. One such program about which the administration and Board was approached was the Project DARE (Drug Abuse Resistance Education) program supported by the local Olmsted County Police Department.

Project DARE is a substance abuse prevention program designed to educate elementary school children about how to resist peer pressure to experiment with alcohol, tobacco, and other substances. This unique program gives special attention to fifth and sixth graders to prepare students for entry into junior high and high school, where they are most likely to encounter their first pressure to use alcohol, tobacco and other substances (Battjes, 1985; Blau et al., 1988; Gonzales, 1989; U.S. Department of Education, 1986).

Research Question

The purpose of this study was to determine if the DARE program will be effective in increasing students' awareness and knowledge of various substances and their abuse. From this information the shareholders of Project DARE will determine if this program is worth the time, effort, and resources involved in teaching the program and/or implementing the program into the school's curriculum.

To help determine the value and impact of the program on the students, the following question was asked:

Will the DARE officer effectively teach about chemical substances and substance abuse?

Hypothesis

The following null hypothesis has been formulated for this study.

There will be no difference in the knowledge of chemical substance and substance abuse between the control group and the experimental group being instructed in the DARE program.

Significance of the Study

Americans turn to schools for educational solutions whenever significant problems which affect large segments of school-aged students exist (LaChance, 1989). Educational efforts and programs evolve to meet the areas of societal concerns. There is often a deep and abiding faith that some educational efforts are better than no efforts (Morehouse, 1979).

The DARE program was chosen for this study, in part, because it allows the interaction and cooperation between the local government agency and the school district. There are many positive benefits to be found

in this interaction that may enhance the school, community, and county.

There is also a definite need for this type of Researchers have provided us with information attesting to the fact that information and programs concerning substance abuse should be initiated in the elementary schools as early as possible (DeJong, 1987; Johnston et al., 1989; LaChance, 1989; National Institute of Alcohol Abuse & Alcoholism [N.I.A.A.A.], 1983; Towers, 1987; U.S. Department of Education, 1986).

The results of this study will indicate to students, parents, teachers, administrators, and the School Board if they should continue to use the Project DARE program in the elementary curriculum. This study may also give an indication if the two agencies can work together successfully to ensure student success for future programming.

Definition of Terms

Project DARE is an acronym that stands for Drug Abuse Resistance Education and was the independent variable for the study. It is a substance-abuse prevention program designed to equip elementary school

children with skills for resisting peer pressure to experiment with alcohol, tobacco, and other substances.

Project DARE focuses on four major areas:

1. Providing accurate information about tobacco, alcohol and other drugs.
2. Teaching students decision-making skills.
3. Showing students how to resist peer pressure.
4. Giving students ideas for alternatives to substance use.

This innovative program has several features including:

1. Project DARE targets elementary school children. Junior high and high school substance education programs have come too late to substance use among youth in the past. Therefore, substantial numbers of young people have reported initiating use of alcohol, tobacco, and marijuana by junior high school (Johnston et al., 1989).

2. Project DARE offers a highly structured, intensive curriculum developed by health education specialists. A basic precept of the DARE program is that elementary school children lack sufficient social skills to resist peer pressure and to say no to drugs.

The DARE instructors do not use the scare tactics of traditional approaches that focus on the dangers of substance use.

3. Project DARE uses uniformed law enforcement officers to conduct the class. Uniformed officers as DARE instructors not only serve as role models for children at an immpressionable age, but also have high credibility about the subject of substance use. Moreover, by relating to students in a role other than that of law enforcement, officers develop a rapport that promotes attitudes toward the police and greater respect for the law.

4. Project DARE represents a long-term solution to a problem that has developed over many years. Many people believe that, over time, a change in public attitudes will reduce the demand for substances. DARE seeks to promote that change. Equally important, DARE instructors help children develop mature decision-making capabilities that they can apply to a variety of situations as they mature.

Statement of Methodology

Instrumentation

A 17-question true/false test was derived from the program objectives and was given before the start of DARE and at the end of the program 17 weeks later. The test was designed to determine what students learned about substance use and abuse.

The officer who administered the non-timed test checked with the classroom teacher before and after the lesson presentation to ensure that the planned curriculum had been taught. Teachers and teaching assistants closely monitored the test to ensure that all students read and understood each question.

Sampling

The study involved five classes of 26 to 28 students from the fifth grade who had been assigned at the start of the second semester of the 1989-1990 school year. The three treated groups included 73 students, while the two non-treated groups included 52 students.

The Project DARE curriculum was organized into 17 classroom activities conducted by the police officer,

coupled with suggested activities taught by the regular classroom teacher. A wide range of teaching activities were used including group discussion, role-playing, simulation, question-and-answer, and workbook exercises, all designed to encourage student participation and response.

Chapter II

REVIEW OF THE LITERATURE

Introduction

Over the past two decades, increased public concern about substance abuse in the United States has stimulated a major effort on the part of educators, researchers, policy makers, and concerned citizens to find effective strategies to deter the use of illicit drugs, including alcohol, among youth (DeJong, 1987; Johnston et al., 1989). As a result, a wide variety of substance abuse prevention programs for youth have evolved which differ in orientation, scope, methods, and purpose (LaChance, 1989; U.S. Department of Education, 1986).

The negative effects of substance abuse on the ability to learn and the disruptions in the school environment provide a strong impetus for the schools to find effective solutions to substance use among youth (Botvin & Wills, 1985). The passage of Public Law 99-570, The Comprehensive Drug Abuse Prevention, Treatment, and Rehabilitation Act of 1986, has renewed the mandate and increased the funding to communities, prevention agencies, and the public schools to deal

with substance abuse by young people. However, schools attempting to respond to this mandate confront a variety of conflicting claims concerning the "best" program strategies. Thus, planners of prevention programs face a confusing array of contradictory information in attempting to chart a course for local substance abuse initiatives for youth (Green, 1987).

The Role of the School in Adolescent Substance Abuse

The concept of substance intervention operated through the public schools was one questioned by many school administrators (Green, 1987). Some educators debate the notion that schools are for education, not medical or mental health treatment that the schools do not have the responsibility for solving students' emotional and physical problems (Green, 1987). However, when school is the only constant in an adolescent's life and when children of all ages bring their problems to the school environment, some educators argue that the school has the obligation to address these problems and try to implement change (Collabolleta et al., 1983).

It is not realistic to expect the schools to be solely responsible for the problems of substance abuse

in adolescents as well as for its solution (Botvin & Wills, 1985; Leatt, 1987). It is easy for parents, politicians, and other community members to unload the problem on schools. Schools provide a great setting for programs focusing on awareness and prevention, which make a vital contribution to the ongoing fight against substance abuse (McCurdy, 1986).

The major components of the school's anti-drug effort are early intervention and prevention activities (DeJong, 1987; LaChance, 1989; U.S. Department of Education, 1986). Although no prevention approach has proven to be totally effective, programs based on the reasons students take substances, such as social pressures, hold the most promise (LaChance, 1989).

School substance prevention and intervention programs that work and last have the following characteristics: one person in charge, their own budget and staff resources, and well-thought-out, consistently implemented policies and rules (Johnston et al., 1989; U.S. Department of Education, 1986). They also are usually staffed by highly dedicated and enthusiastic people who receive both school staff and members of the community. Successful prevention programs are also consistent from one school to another

within the same school district (DeJong, 1987; Towers, 1987).

Adolescent Substance Abuse Prevention

Past substance prevention programs that have failed were most likely grounded on incorrect assumptions about why adolescents begin using psychoactive substances (Polich, Reuter, & Kahan, 1984). The object is to aim at the reduction, delay, or prevention of substance abuse before it has become habitual or clearly dysfunctional.

Primary prevention is focused on early stages, trying to keep young people from ever starting at all, or if they have experimented, from shifting into regular use. Most primary prevention programs are aimed toward younger populations or groups of adolescents who have not been identified as having a substance use problem and are not "at risk" for developing a problem (Goodstadt, 1981).

Secondary and tertiary prevention programs face more difficult odds than primary prevention programs (Goodstadt, 1981). There is now evidence to support the theory that the longer a person delays substance involvement, the more likely it is that he or she will

be able to stop using in the future (Polich et al., 1984).

Types of Substance Abuse Programs

Information-only programs may increase knowledge about substances, but evidence does not suggest that they affect actual behavior (U.S. Department of Education, 1986). Some experts have even claimed that these programs cause increased substance use (Polich et al., 1984). The main assumption underlying most of these programs is the belief that a change in attitude will lead to a change in behavior.

Affective education programs focus on such things as values, clarification, improving self-esteem, and decision-making skills. An inherent weakness in these programs is that they are extremely difficult to implement (Botvin & Wills, 1985). The goal of many of these programs is to try to effect a change in self-concept, something that is the product of the adolescent's entire life experience (Miller, 1988). Evidence that short-term programs can raise self-esteem is limited, and current research is questioning the relationship between low self-esteem and the onset of substance use (Kandel, Kessler, & Margubes, 1978).

Schools can be of assistance to high-risk students and families in several ways. Special programs for high-risk children have been developed based on the employee assistance program model (Morehouse, 1979). Schools can also be the focal point for parental programs that teach enhanced family communications and other skills (Bry, 1987; Hawkins, Lishner, Catalano, & Howard, 1985).

Making available the best substance education curriculum based on the correct assumptions about why adolescents begin using psychoactive substances is not enough. The factors that contribute to adolescent substance abuse are too complex. Steps must also be taken to ensure that community support remains consistent and leads to a variety of school based and nonalcohol based programs available and accessible to all preadolescents and adolescents (Bry, 1987).63

Curricula for the Prevention of Substance Abuse

Now it is understood that substance abuse is associated with a variety of social, interpersonal, and behavioral factors (Blau et al., 1988; Bry, 1987; Gonzales, 1989; Johnston et al., 1989; Leatt, 1987). Most health education curricula today are a great deal

more comprehensive than in previous years. Most of them are based on the research that emphasizes self-esteem, decision-making, and refusal skills, and pertinent information about the effects of substances (Towers, 1987; LaChance, 1989).

The following are four recommendations for those in charge of planning and implementing substance abuse prevention programs in the public schools (U.S. Department of Education, 1986).

1. Use a broad based approach. Deter substance use by limiting availability of substances on and around school property and imposing stiff and consistently enforced penalties for use, possession, and distribution. Continue to provide information about the effects of substances in a factual manner, emphasizing their short-term or immediate physical and social effects. Provide social skills training, including how to analyze the consequences of individual choices and identify alternative behaviors consistent with the individual's value system. Schools and community organizations must cooperate with the home and other agencies to provide more responsible and age-appropriate alternative activities that help youngsters

increase their bonds with school, family, and community (Leatt, 1987; McCurdy, 1986; N.I.A.A.A., 1983).

2. Start prevention activities early. According to many experts, early age of substance use if one of the best predictors of future serious abuse (U.S. Department of Education, 1986). Prevention efforts should begin before youngsters are the age of twelve and faced with hard decisions. Putting prevention programs in place in elementary schools is critical (DeJong, 1987; Johnston et al., 1989; LaChance, 1989; Towers, 1987). Also, special efforts should be made to bolster prevention activitites during especially traumatic and vulnerable times, just before the transitions to middle school and to senior high school (N.I.A.A.A., 1983; U.S. Department of Education, 1986).

3. Help high-risk students first. We know from research, experience, and common sense that some students are at greater risk of becoming substance abusers than others (Battjes, 1985; Blau et al., 1988). Sometimes these children exhibit their vulnerability early in their school careers, but more often they are noticed in middle school and senior high school. This is not to say that prevention programs should not be offered to all students. When students are identified

as being at high risk, they should be given additional help immediately.

4. Cover all bases. Prevention efforts should be a continuum of interrelated and complementary activities including those at school, at home, and in the community (N.I.A.A.A., 1983). Prevention efforts must extend beyond information and awareness to social-environmental, interpersonal, and behavioral factors. Children become involved with substances by starting "gateway" substances such as tobacco and alcohol. We must concentrate early in students' lives on showing them the dangers in using these harmful substances (U.S. Department of Education, 1986). Everyone's help should be enlisted, including that of successful non-substance-using students who can serve as positive peer role models (Green, 1987).

General Summary

The importance of early prevention and early interventions regarding substance abuse cannot be over emphasized. Teachers will continue to play a crucial role on the team of professionals with whom adolescents associate daily.

Schools and teachers cannot do it all. After all, their primary concern is to instruct students. Students spend a great deal of their time in school, and school personnel are very likely to notice questionable behaviors. If an effective substance abuse program like DARE can be established at the elementary school level, then at least an avenue for early substance abuse education and intervention exits.

Chapter III

METHODOLOGY

Introduction and Purpose

The purpose of this study was to determine if the Project DARE program would impact elementary aged students. Specifically, the study's purpose was to determine if, in 17 weeks of once-a-week hourly lessons, Project DARE would and could improve the awareness of and knowledge of fifth grade students of chemical substances and their abuses.

The first component of the study was to decide which chemical substance program would be used. The Project DARE program was chosen because it had a well written, teacher-designed curriculum, it served as an attempt to work closely with another community agency, it used a trained police officer as an instructor, and it was available to the school district at no expense.

The second component of the study was to determine if the 17 hourly sessions would directly and positively impact students from the fifth grade concerning chemical substance knowledge and abuse. It was decided to use the Project DARE program and its full complement

of lessons to let the program run through its intended educational objectives.

Contruction of the Test

The test (see Appendix A) was designed to be easily and quickly administered so it would not be intimidating to fifth grade students. The test was designed to question the most important lesson objectives and learner outcomes of the program. The test was designed in part to help the police officer instructor determine in a short amount of time, how much information concerning these objectives the students already knew. Knowing this, the instructor could determine which learner objectives would require the most emphasis.

The questions of the test were randomly placed so as not to follow the exact order of the prescribed units of the curriculum. Most objectives in the test were taught several times throughout the DARE program so the students were able to have repeated exposure to the lesson objectives through the different course activities.

The police officer and classroom teacher were able to closely monitor the students during the test taking

procedure to make sure that each student was on task, following directions, and marking the test correctly. The test was not timed, and precautions were taken to ensure that the test taking environment was suitable for all students.

Selection of Sample

The DARE instructional program was designed to be taught in the fifth grade, and this grade was used for this study. The fifth grade in the Stewartville school system was placed into five classroom sections and contained class sizes of 26, 27, 27, 27, and 28 at the time of the implementation of the program. Three sections totaling 83 were exposed to the DARE programming and were considered the experimental group. Two sections including 52 students were used as the control group. The treated sections were chosen because the classroom instructors volunteered to be a part of the program. The Stewartville School system had not been involved in the Project DARE program before, so the students had not been exposed to the program prior to its initial delivery.

Collection of Data

The test was sent to the instructional staff in mid-January, 1990, and given to the students in late January, 1990, before the actual DARE programming began. The instructors were included in explanatory sessions given by the DARE police instructor before the test was given. Included in the explanatory sessions were specific directions and instructions. The teachers were requested to return the student surveys to the DARE instructor who reviewed them and turned them over to the researcher.

The pretests were completed before the beginning of the DARE program instruction to act as an indicator of the students' knowledge before the actual programming. The test was also administered after the DARE 17 weeks' program was completed to compare the difference between the pretest and the posttest.

Treatment of Data

After the data had been collected from the control and experimental groups, they were coded and entered into the computer for statistical analysis. An analysis of covariance was the statistical test utilized to determine if there was a significant

difference between the pretest and posttest results. The analysis of covariance statistical analysis works well in the school setting because it allows already set up intact groups such as class sections to be used for research studies. Analysis of covariance was used to provide adjustments for starting points through the use of adjusted means. It should be noted that analysis of covariance does not make the groups equivalent.

Hypothesis

The hypothesis stated that there would no difference in the knowledge of chemical substance and substance abuse between the control group and the experimental group being instructed in the DARE program.

Chapter IV

FINDINGS

Introduction

The purpose of this study was to investigate the effectiveness of the DARE Program on student knowledge levels concerning substance abuse. A 17-question pretest and posttest were given 17 weeks apart. The test was scored on a total point basis. Composite scores were compared from the pretest with the final analysis coming from gains realized on the posttest. This chapter will present the results of the collected data and dicuss if statistically significant data were found.

Analysis of the Hypothesis

The null hypothesis stated there was no difference in the knowledge of chemical substance and substance abuse between the control group and the experimental group being instructed in the DARE program.

The statistical test that was used was the analysis of covariance (ANCOVA) for analyzing the differences between the mean score gain of each individual case. The ANCOVA was utilized to analyze

adjusted means based on pretest scores. This test adjusted the pretest scores of the treated and untreated groups to find statistically significant results.

The analysis of covariance procedures analyzed the compiled substance abuse test data shown on Table 1. The posttest scores were compared to determine if there was a notable statistical significance attributable to the direct teaching of the DARE program. The objective in the statistical analysis was to determine whether the differences in the achievement between the groups were significant at the .05 level. The ANCOVA indicated that there was significance at the .05 level. Therefore, the null hypothesis was rejected. This result indicated that there was statistical significant difference between the treated and non-treated groups.

Even though statistically significant difference was determined to exist between the two groups, a delta test was calculated to determine if a practical significance existed between the two groups because of the DARE treatment.

Final calculations indicated that the grand mean was 14.97. By using the calculated mean of 15.57 for

Table 1

Analysis of Covariance (One Covariate) Sum of Square

Tables for Pretest and Posttest DARE Scores

Source of Variation	Sum of Squares	df	Mean Square	F	Significance of F
Covariates (Total raw score)	86.806	1	86.806	37.987	.000
Main Effects	83.433	1	83.433	36.511	.000
Explained	170.239	2	85.120	37.249	.000
Residual	301.642	132	2.285		
Total	471.881	134	3.522		

the treated group, and a calculated mean of 14.02 for the control group, the delta test indicated that a practical significance did exist (see Table 2). The calculations indicated that approximately 84% of the students who received the DARE treatment would score above the mean of those who did not receive the treatment.

Table 2

Calculations for Delta Using Calculated Means

Delta equals the mean of the experimental group subtracted from the mean of the square of the control group divided by the square root of the mean square of the residual (error).

$$\Delta = \frac{Xe - Xc}{\sqrt{MS\ Error}} = \frac{15.57}{\sqrt{2.285}}$$

$$= \frac{1.55}{1.51}$$

DELTA = 1.03

The analysis of covariance was also able to make adjustments for the difference of entry levels based on pretest results. The ANCOVA provided adjusted means

for both the control and experimental groups (see Table 3).

Table 3

Calculations for Delta Using Calculated Adjusted Means

Delta equals the mean of the experimental group subtracted from the mean of the square of the control group divided by the square root of the mean square of the residual (error).

$$\_\_ = \frac{Xe - Xc}{\frac{}{\text{MS Error}}} = \frac{16.19 - 13.03}{\frac{}{2.285}}$$

$$= \frac{3.16}{\frac{}{2.285}}$$

DELTA = 2.09

The adjusted mean for the experimental groups was 16.19 and the adjusted mean for the control group was 13.03. A second delta test was run to determine if there was further practical significance based on the adjusted means. Results of the second delta test taking into consideration the adjusted means indicated that approximately 98% of the students in the experimental group may score higher than the mean of the students in the control group.

Chapter V

SUMMARY, CONCLUSIONS, DISCUSSIONS, LIMITATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine if Project DARE has a postive influence on fifth grade students by making them more aware of and more knowledgeable of chemical substances and their abuses. An analysis of covariance was used to test for statistical significance. The ANCOVA was utilized to analyze the difference between the mean score gain of each individual case.

The Project DARE (Drug Abuse Resistance Education) program has been offered as a promising utilization of an activity based, police officer instructed substance prevention education program.

Project DARE targets students before they are likely to have been led by their peers to experiment with chemical substances by reaching students at an age they are most receptive to substance prevention education. Project DARE seeks to prevent adolescent substance use and to reduce substance trafficking by eliminating the demand for chemical substances.

Project DARE was designed to be used at the fifth or sixth grade level and utilize a variety of activity oriented teaching strategies. The main focus of Project DARE is to teach students to recognize and resist social pressures to experiment with chemical substances. Project DARE also emphasizes individual student development in the areas of self esteem, decision making and interpersonal relationships.

Past studies have shown that Project DARE produced statistically significant results in substance prevention education use research (DeJong, 1987). This specific study has attempted to focus on the practical aspect of the teaching of substance prevention information. This study has provided a short term look at the problems involved in teaching about substance use prevention weighed against the possible benefits which may be gained by the students. Comparisons of the treatment (experimental) group scores were made to a control group in the same grade and same school. Short term benefits were realized in both a statistical and practical manner.

The study provided specific information that helped the investigator judge the value of the program.

More specifically, the police officer who instructed the curriculum, the regular teachers, and the instructed students all enjoyed the program and enthusiastically participated in the weekly lessons. Students did improve in their understanding of chemical substance use and abuse. The parents and the community got involved in the process of the educational programming and strongly supported the Project DARE program.

Conclusions and Discussions

Students who were instructed for the 17 weeks of the DARE curriculum showed statistically significant and practically significant gains in posttest scores. This conclusion was to be expected because of the fact that the questions on the pretest/posttest were written to evaluate the specific unit objectives of the Project DARE curriculum. Instruction in these specific substance use prevention areas, helped in most cases, assure that improvement would occur during the instructional time frame.

The gain in the adjusted mean scores illustrated to the investigator the study's practical significance, and that improvement in the student's understanding of

key concepts occurred. The practical significance findings indicated that students who were actively involved in and instructed by the Project DARE curriculum realized benefit from this type of instruction. Because of the true-false format of the pre and posttest, pure chance must be considered as a possible threat to the validity of the results. However, based on the findings of the "F" value test and the findings of previous research, the investigator would suspect that the Project DARE programming was the cause for the improvement of the test scores.

Limitations

Students were not randomly assigned to receive the full DARE curriculum because students were assigned to class sections at the time of the study. Three of the five fifth grade classes, including 83 students, took part in the DARE instruction. The three class sections were chosen because of logistical constraints. However, the DARE program was not implemented in a way that deliberately excluded certain groups of students.

The true-false pretest/posttest could have had a high precentage "chance" influence on the test results.

Students may have "guessed" more appropriately on the pretest or the posttest, affecting score results.

This study involved a police officer who instructed fifth grade students for the first time. The instructor's effectiveness in motivating students or implementing various instructional techniques and modalities could have affected the students' learning, and therefore test results.

The age and gender of the students could have had an effect on the testing results. Self-esteem, decision-making, and problem solving skills are still in formation during the fifth grade for both boys and girls. Regardless of the particular substance prevention educational program used, fifth grade students are still preparing to develop necessary interpersonal and decision-making skills. Until students have developed interpersonal and decision-making skills, the difference which results from various substance prevention treatments may not be great. The results of the study do suggest that the use of interpersonal and decison-making skill instruction during this formation period may facilitate the building up of self-esteem and resistance skills.

This type of instruction would appear to serve as a reservoir of experiences from which students can draw in subsequent years.

Recommendations

As a result of this study, recommendations for further study are necessary, if a determination is made to include the Project DARE substance prevention program in the school curriculum. Based upon accepted and notable researchers such as Battjes and Johnston, attention has now turned to the social pressures that prompt children to use substances that have negative social and physical consequences. Recent efforts to discourage experimentation and use of substances such as drugs, alcohol, and tobacco focus on providing adolescents with social skills training so that they can successfully resist peer pressure. Still, teaching children how to refuse offers of drugs and alcohol is insufficient by itself, as they must also be motivated to apply those skills (Johnston et al., 1985). To create that impetus, recent curricula also give students accurate information about the immediate and long-term consequences of substance use, build esteem, and teach decision-making skills (LaChance, 1989).

Nearly all program delvelopers agree that the following three strategies should be incorporated into the curricula of substance prevention programs (Battjes, 1985; LaChance, 1989; Polich et al., 1984; U.S. Department of Education, 1986).

1. Affective education strategies are based on correlational studies that have found a relationship between initiation of substance use and self-esteem, attitudes, and personal values. These strategies focus on: (a) promoting children's positive self-esteem; (b) developing successful interpersonal skills, including open communication and self-assertiveness; and (c) improving decision-making skills, by clarifying personal values, analyzing the consequences of substance use in light of those values, and instilling a more deliberate selection of alternative behaviors consistent with those values.

2. Providing alternative activities to substance use is a second common approach. Young people are encouraged to participate in community improvement projects and vocational activities with the hope of increasing self-esteem, reducing feelings of alienation, and reducing boredom. In classroom-based

programs, students are encouraged to identify alternatives to drug and alcohol use and the positive outcomes associated with each.

3. Social skills training teaches children how to recognize various forms of influence from peers, parents, and the media, and how to resist pressures to use substances. Such training typically involves behavior modeling, role-playing, and extended practice, and culminates in a public commitment not to use tobacco, alcohol, or drugs.

With the agreement on the strategies and teaching modalities by current researchers, further longitudinal studies are essential. It would not be in students' best interest to postpone efforts to teach substance prevention information (Gonzales, 1989; U.S. Department of Education, 1986).

As a result of this 17-week study, Project DARE was found to have a statistically significant effect on the knowledge of student substance use prevention. Of equal importance was the finding that a practical significance did exist concerning the knowlege gained in substance use prevention information.

School substance prevention programs should adhere to the research findings that suggest the emphasis of drug prevention education should be concentrated on building students self-esteem, teaching decision-making skills, and, most important, giving the students guided practice in resisting peer pressure to use drugs and engage in other negative behaviors.

The researcher's recommendation would be to continually investigate new or improved developments in substance prevention education. A follow-up study should be conducted every year to evaluate how the teaching of Project DARE affected the attitudes and behaviors in elementary schools.

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APPENDIX A: Test

Name _____
Class _____ Score ___

WHAT DO YOU KNOW ABOUT DRUGS?

The following statements are about drugs. Read each statement. In the spaces provided, write TRUE for those statements that are true and FALSE for those statements that are false.

_____ 1. Downers are drugs that make your heart beat faster.

_____ 2. It is safe to take a medicine that a doctor prescribes for someone else.

_____ 3. Drugs bought on the street are safe to use.

_____ 4. When you have a headache, you can take as many asprins as you want to and as often as you need them.

_____ 5. It is dangerous to ride in a car with a driver who has been drinking alcohol.

_____ 6. Smoking marijuana may be more harmful than smoking regular cigarettes.

_____ 7. The PCP in "Sherms" can produce uncontrollable behavior in people who use them.

_____ 8. Drug abuse means the wrong use of a drug or a medicine.

_____ 9. Using drugs regularly can be habit-forming.

____ 10. Uppers are drugs that make people feel sleepy.

_____ 11. If a friend offers you something, it is probably safe to take.

_____ 12. If someone you like offers you a drug, there is no way to refuse.

_____ 13. Breathing deeply is a good way to feel better when you are upset.

_____ 14. Almost five out of every ten students your age use drugs like marijuana and alcohol.

_____ 15. Television commercials about drugs are usually true.

_____ 16. Some people start using drugs and alcohol because their friends do.

_____ 17. People should talk problems over with a person they trust.

APPENDIX B: Raw Score Data

RAW SCORE DATA

CASE	TREATMENT	GENDER	PRETEST	POSTTEST
1	0	0	15	17
2	0	1	14	17
3	0	1	14	17
4	0	1	17	17
5	0	1	14	17
6	0	0	16	16
7	0	0	15	13
8	0	0	14	16
9	0	1	14	14
10	0	0	17	16
11	0	0	15	17
12	0	0	15	15
13	0	0	14	16
14	0	1	13	16
15	0	1	14	17
16	0	0	16	15
17	0	0	15	16
18	0	1	14	14
19	0	0	15	17
20	0	1	13	15
21	0	0	13	17
22	0	1	13	16
23	0	1	15	16
24	0	1	16	17
25	0	0	8	10
26	0	0	15	15
27	0	1	15	16
28	0	1	13	16
29	0	0	17	15
30	0	0	15	17
31	0	1	15	15
32	0	0	14	17
33	0	0	15	16
34	0	1	17	17
35	0	1	14	17
36	0	1	17	17
37	0	0	15	16

CASE	TREATMENT	GENDER	PRETEST	POSTTEST
38	0	0	14	15
39	0	1	14	13
40	0	1	13	16
41	0	0	12	16
42	0	0	15	17
43	0	0	15	14
44	0	1	16	17
45	0	1	13	17
46	0	1	12	17
47	0	0	15	15
48	0	0	15	17
49	0	0	14	15
50	0	0	14	17
51	0	1	15	13
52	0	0	14	15
53	0	0	16	17
54	0	1	16	17
55	1	0	14	17
56	1	0	15	17
57	1	0	15	17
58	1	0	13	13
59	1	0	15	13
60	1	0	14	15
61	1	0	15	15
62	1	0	15	15
63	1	0	13	13
64	1	1	16	17
65	1	1	16	13
66	1	1	15	15
67	1	1	13	15
68	1	1	14	14
69	1	1	12	13
70	1	1	11	12
71	1	0	15	16
72	1	0	16	15
73	1	0	16	16
74	1	0	15	15
75	1	0	15	15
76	1	0	16	17
77	1	0	14	13
78	1	1	16	15
79	1	1	17	15
80	1	0	13	13

CASE	TREATMENT	GENDER	PRETEST	POSTTEST
81	1	1	14	11
82	1	0	15	13
83	1	0	13	7
84	1	0	12	13
85	1	0	17	14
86	1	1	15	16
87	1	1	17	16
88	1	1	15	12
89	1	1	13	13
90	1	1	16	14
91	1	1	12	9
92	1	0	15	14
93	1	0	15	13
94	1	0	16	13
95	1	0	15	16
96	1	0	14	14
97	1	0	16	15
98	1	1	14	15
99	1	1	9	13
100	1	1	14	16
101	1	1	11	12
102	1	0	16	15
103	1	0	8	12
104	1	1	15	13
105	1	1	16	13
106	1	0	11	13
107	0	0	13	13
108	0	0	14	15
109	0	0	13	15
110	0	0	13	13
111	0	0	16	17
112	0	0	12	11
113	0	0	15	17
114	0	0	13	14
115	0	0	13	15
116	0	0	15	16
117	0	1	15	16
118	0	1	14	16
119	0	1	15	16
120	0	1	11	15
121	0	1	14	14
122	0	1	16	17
123	0	1	12	17

CASE	TREATMENT	GENDER	PRETEST	POSTTEST
124	0	1	15	15
125	0	1	14	14
126	0	1	11	16
127	0	1	16	17
128	0	0	13	15
129	0	0	12	12
130	0	1	14	17
131	0	1	16	17
132	0	1	14	16
133	0	0	15	17
134	0	0	7	13
135	0	1	8	13

APPENDIX C:

Procedures for Administering the Test

In order to administer the test efficiently and make directions understandable, the teacher should become familiar with the directions and the test items before the test is given. In addition, the teacher should closely monitor the students' test taking behavior to make sure that each child is following directions, is on the correct item, and is marking the test form correctly.

Lighting, ventilation, and space should contribute to the comfort of the setting in which the test is administered. Effort should also be made to minimize distractions such as noise or activitites that draw the students' attention from the test.

The items on this test are not timed. The test should be administered in more than one sitting depending upon the needs of the students. Two sessions of 40 minutes should give all students ample time for the completion of this test. An additional 10 minutes should be scheduled for each testing session to allow time for distributing and collecting material.